

TEMPERATURE INDEPENDENT MICROELECTROMECHANICAL SWITCHES

ABSTRACT

5 The present invention provides a method and apparatus for
reducing temperature dependency within Microelectromechanical
System (MEMS) switches. The two typical designs for such MEMS
switches are fixed-fixed and fixed-free designs. Springs are
used in the fixed-fixed design to account for dimensional
10 changes as a result of thermal expansion. The fixed-free
designs utilize a tether to prevent a cantilever arm from
deforming as a result of thermal expansions, as well as
reducing tight controls in the manufacture of fixed-free MEMS
switches. Additionally, to prevent stiction in MEMS switches,
15 a variegated electrode design is provided to utilize internal
stresses of a suspended beam to increase the restoring force
while not increasing the actuation force.